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Biochemistry of Chronic Obstructive Lung Disease.

This project involves the study of the properties and function of both alpha-1-antitrypsin and leukocytic elastase(s) from human blood. The study is designed to test whether lack of alpha-1-antitrypsin can cause emphysema by allowing leukocytic elastase(s) to digest basement membrane in the lung.

Both proteins have now been isolated in a relatively pure form and antibodies are being prepared to each. The experimenters will fluorescent-label each and by histological section attempt to deposit each antibody on lung taken from individuals who are homozygous deficient for the alpha-1-antitrypsin. In theory, the antibody to elastase(s) should be deposited while that to the alpha-1-antitrypsin should not.

They are also interested in determining the mode of interaction between the proteinase and the proteinase inhibitor as they feel that the mechanism is extremely useful.

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